

REMARKS

Applicants thank the Examiner for recognizing that Applicants April 12th Amendment and Response was a bona fide attempt to respond to the Office Action dated December 11, 2003. The Examiner has asserted that the Amendment was not fully responsive because the "Remarks" appearing on pages 7-9 did not point out the patentable novelty of the newly added claims. Applicants now present arguments pointing out some specific distinctions between the presently claimed invention and the references cited in the December 11th Office Action. Applicants respectfully assert that at least these differences render the pending claims patentable over the cited references.

Claims

Claims 3-23 are pending in the application.

The Rejection of Claims 1-2 under 35 U.S.C. § 103(a)

Original claims 1 and 2 were rejected as being unpatentable over Good *et al.*, "Structure-Activity Relationship from Molecular Similarity Matrices," Journal of Medicinal Chemistry, Vol. 36 No. 4, pp. 433-438 (February 1993), in view of Herndon, "Similarity and Dissimilarity of Molecular Structures," report in Warr, "Exploiting Molecular Diversity," pp. 23-25 (February 1995), and further in view of Egger *et al.*, U.S. Patent 5,832,494 issued on 3 November 1998 and filed 17 May 1996. Office Action dated December 11, 2003 at p. 3.

By way of an Amendment and Response to Office Action dated April 12, 2004, original claims 1 and 2 have been cancelled and new claims 3-23 added. Amendment and Response to Office Action dated April 12, 2004. Pending claims 3-23 of the instant application are directed towards a method for graphically interfacing between a computer system and a user, wherein the computer system displays objects representative of chemical compounds, wherein distances between the objects represent dissimilarity between the corresponding chemical compounds (emphasis added).

Pending Claims 3-23 Are Patentable Over the Cited References

The Examiner asserts that: Good *et al.*, teaches a method of calculating and displaying

molecular similarity matrices using a variety of metrics; Herndon, according to Warr, lists the types of metrics available for determining molecular similarity; and Egger *et al.* attempts to calculate similarities and display graphical results. Office Action dated December 11, 2004 at p. 4, ¶ 7. Applicants respectfully assert that pending claims 3-23 are patentable over the cited references because Good *et al.*, Herndon, and Egger *et al.*, alone or in combination, fail to teach or suggest representing dissimilarity between chemical compounds.

A. Each and Every Element of Applicant's Claimed Invention Is Not Disclosed in the Cited References

For a reference to anticipate a claims under 35 U.S.C. § 102, “the reference must teach every aspect of the claimed invention either explicitly or impliedly.” M.P.E.P. 706.02. *See also Rowe v. Dror*, 112 F.3d 473 (Fed. Cir. 1997) (“A prior art reference anticipates a claim only if the reference discloses, either expressly or inherently, every limitation of the claim.”). In order to anticipate a claim, the reference must also enable one skilled in the art to make and use the claimed invention. *PPG Indus., Inc. v. Guardian Indus., Corp.*, 75 F.3d 1558 (Fed. Cir. 1996) (“To anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter.”). Applicants respectfully assert that, because the references cited by the Examiner fail to teach or suggest each and every element of the claimed invention, rejection of claims 3-23 under 35 U.S.C. § 102 is improper.

Good *et al.* describes use of a neural network to qualitatively graph different types of similarity matrixes for different compounds. *See, e.g.*, Good *et al.*, Fig 3, Fig 3 legend, and corresponding text on p. 435. Good *et al.* also analyzes similarity matrices quantitatively using a partial least squares approach (*see, e.g.*, Good *et al.*, Table II, and corresponding text on p. 435) and compares the results of the two methods (*see, e.g.*, Good *et al.*, p. 437). Contrastingly, claims 3-23 of the instant application are drawn towards displaying dissimilarities between corresponding chemical compounds. As such, Applicants respectfully assert that Good *et al.* fails to teach or suggest the presently claimed invention.

According to Warr, Herndon describes “measuring molecular similarity” based on different molecular descriptors (emphasis added). Contrary to this, claims 3-23 of the instant application are

drawn towards “represent[ing] dissimilarity between the corresponding chemical compounds” (emphasis added). Therefore, Applicants respectfully assert that Warr fails to teach or suggest the presently claimed invention.

Egger *et al.* describes categorizing textual data by an “indexing technique called proximity indexing [which] generates a quick-reference of the relations, patterns and similarity found among the data in the database.” See, e.g., Egger *et al.*, col. 3, ll.29-31. The data is then put through two other programs CSPDM and GUI, each having several subroutines. See, e.g., Egger *et al.*, cols. 4-7. Contrary to this, the presently claimed inventions looks at dissimilarities of the corresponding compounds and therefore do not find relations, patterns or similarities amongst data. Applicants respectfully assert, therefore, that claims 3-23 are patentable over Egger *et al.* because Egger *et al.* fails to teach or suggest each element of the pending claims.

Therefore, Applicants respectfully assert that claims 3-23 of the instant application are patentable over the cited references because Good *et al.*, Herndon, and Egger *et al.* fail to teach or suggest each and every element of the claimed invention.

B. No Suggestion or Motivation to Modify or Combine the References to Arrive at Applicant’s Claimed Invention

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the references when combined must teach or suggest all the claim limitations. See MPEP § 2143.

The burden of establishing a *prima facie* case of obviousness lies with the Examiner. In determining obviousness, one must focus on the invention as a whole. *Symbol Technologies Inc. v. Opticon, Inc.*, 19 USPQ 2d 1241, 1246 (Fed. Cir. 1991). The primary inquiry is: “[w]hether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have had a reasonable likelihood of success Both the suggestion and the expectation of success must be found in the prior art, not the applicant’s disclosure.” *In re Dow*

Chemical, 5 USPQ 2d 1531 (Fed. Cir. 1988). Furthermore, teaching away of prior art is a strong indication of nonobviousness. *In re Soni*, 54 F.3d 746 (Fed. Cir. 1995).

Applicants respectfully assert that one of ordinary skill in the art, at the time of Applicant's instant invention, would not have been motivated to modify and/or combine the teachings of the cited references so as to arrive at Applicant's invention as embodied in pending claims 3-23.

As discussed above, Good *et al.* seeks to use a new similarity matrix via a neural network that will result in analogous data compared to those achieved using comparative molecular field analysis, and Herndon lists the different descriptors where chemical compounds can be compared. Egger *et al.* discusses use of a computer for visualizing textual data in terms of relations, patterns and similarities and allows the user to modify the coloring, shading, texture and background of the data shown on the computer screen. There is no mention in any of these references of measuring dissimilarities between the chemical compounds and/or using a computer system to display a representation of chemical compounds where a user who can then manipulate the presented data.

Furthermore, the combination of teachings of the cited references does not result in the instantly claimed methods. Good *et al.* and Herndon discuss ways of measuring similarity of compounds and Egger *et al.* discusses using a computer program to aid a user search for particular textual information. There is no teaching in any of the cited references that would have suggested a method for graphically interfacing between a computer system and a user, wherein the computer system displays objects representative of chemical compounds, wherein distances between the objects represent dissimilarity between the corresponding chemical compounds, as required by the pending claims. For at least these reasons, Applicants respectfully submit that the cited references do not anticipate or render obvious claims 3-23 in the instant application.

Additionally, pending claims 13-16 of the instant application visualize chemical compounds, not textual data as in Egger *et al.*, and allows far greater manipulation of objects in terms of, for example, rotation, resizing, translation, changing the appearance of objects (visibility, size, shape, color etc.), and changing positions of objects on the map. None of the cited references, alone or in combination with one another, teach or suggest the claim limitation of visualizing chemical compounds, as required by claims 13-16.

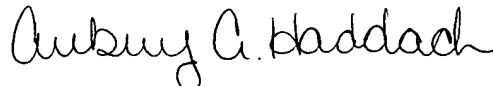
CONCLUSION

Applicants believe that claims 3-23 are in condition for allowance and respectfully request prompt and favorable action. The shortened statutory period for reply expires on August 14, 2004, which falls on a Saturday. Therefore, Applicants believe this response is timely filed and no additional fee is due. However, in the event that any additional fees are required for the filing of this response, please charge such fees to Deposit Account No. 23-2415.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (858) 350-2319.

Respectfully submitted,

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